

REMARKS

Claims 1-7 were previously pending in the application.

Claims 1-7 stand rejected.

Claim 2 stand rejected under 35 U.C.S. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Clams 1 and 7 stand rejected under 35 U.S.C. 102(b) and also under 35 U.S.C. 103 (a).

Claims 2-6 stand rejected under 35 U.S.C. 103(a).

Claims 1 and 2 are amended.

New claims 8-10 are added.

No new matter is added.

With entry of this amendment, claims 1-10 remain in the case.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

Claim Rejections - 35 U.S.C. § 112

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection is respectfully traversed.

Claim 2 is amended to recite, "said upper opening" to clarify the claim language.

Thus, the rejection of claim 2 under 35 U.S.C. 112 is overcome.

Claim Rejections - 35 U.S.C. § 102

Clams 1 and 7 stand rejected under 35 U.S.C. 102(b) as being unpatentable U.S. Pat. No. 5,254,214 issued to Hijikata et al ("Hijikata"). The rejection is respectfully traversed.

Claim 1 is amended to recite, "the electrode has a lower opening and an upper opening, and wherein a diameter of the upper opening is greater than about one third of a diameter of the lower opening to form a thin film having a uniform thickness." Support for the limitations can be found in FIG. 3 and lines 5-11 and 12-25, page 5 of the present application.

Hijikata does not teach or disclose the above limitations of amended claim 1. In particular, Hijikata is merely directed to a method and an apparatus for etching, into a tapered

tape, corner edges of lands of a deposited film. See FIGS. 2A-2C of Hijikata. Thus, there is no need to have an opening configuration of the claimed invention recited in claim 1.

With the opening configuration of the claimed invention, the prior art problem, i.e., plasma with higher density being formed in a central region of the electrode or the chamber, can be prevented.

In Hijikata, it is merely stated that an argon gas or the like is introduced into the chamber 2002 through the tube 204. See col. 5, lines 3-5 of Hijikata. Nowhere Hijikata teaches or discloses the problems of the prior art described in the present application, not to mention the solutions of the claimed invention, i.e., “the electrode having a lower opening and an upper opening, and wherein a diameter of the upper opening is greater than about one third of a diameter of the lower opening to form a thin film having a uniform thickness,” as recited in claim 1. With this opening configuration of the electrode, a plasma density in a central region of a reaction chamber can be reduced. Therefore, a thin film having a uniform thickness can be formed.

For these reasons, Hijikata does not teach all of the limitations of claim 1 and, therefore, Hijikata does not anticipate claim 1. Also, claim 7, which depends from allowable claim 1 and recites features that are neither taught nor disclosed in the cited references, is also allowable.

Claim Rejections - 35 U.S.C. § 103

Clams 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hijikata alone or in view of various references such as U.S. Pat. No. 4,539,068 issued to Takagi et al (“Takagi”), or U.S. Pat. No.5,645,900 issued to Ong et al (“Ong”) or U.S. Pat. No. 5,716,485 issued to Salimian et al. (“Salimian”). The rejection is respectfully traversed.

As discussed above, Hijikata does not teach or disclose, “the electrode has a lower opening and an upper opening, and wherein a diameter of the upper opening is greater than about one third of a diameter of the lower opening.” Further, contrary to the claimed invention in Salimian, the diameter of the upper opening is larger than the diameter of the lower opening. See FIG. 4 and 16 of Salimian.

Thus, the cited references, either alone or in combination, do not teach or suggest all of the limitations of claims 3 and 5. Accordingly, the rejection does not present a *prima facie* case of obviousness. Therefore, claims 3 and 5 are allowable. Also, claims 4 and 6, which depend therefrom and recite features that are neither taught nor disclosed in the cited references, are also allowable.

Further, with respect to claim 2, the prior art device would perform differently than the prior art device because the opening configuration of the prior art electrode is substantially different from the claimed device, of which effects are illustrated in FIG. 4 and the accompanying text of the present application. There is no teaching or suggestion of such opening configuration recited in the claim 2 or the effects shown in FIG. 4 of the present application in any of the cited references.

With respect to new claim 8, none of the cited references teach or disclose, "an upper opening *sized to deposit* a thin film having a uniform thickness on a wafer." (Emphasis added) In contrast, for example, Hijikata does not teach or suggest such opening configuration. See FIGS. 3-5 of Hijikata. Thus, claim 8 is allowable, and claims 9-10 are also allowable for their dependency and their own merits. For example, claim 10 recites the plasma electrode having a lower opening and an upper opening, and wherein a diameter of the upper opening is about *two fifths* of a diameter of the lower opening. (Emphasis added) Support for the limitations can be found in FIG. 4 and the accompanying text of the present application. No such opening configuration is taught or suggested in any of the cited references, either alone or in combination.

For the foregoing reasons, reconsideration and allowance of claims 1-10 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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Limited Recognition Under 37 CFR § 10.9(b)

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